SOUNDINGS IN FEET

18650

Formerly C&GS 5535, 1st Ed. Feb 1926

(CONTINUED ON CHART 18649)

UNITED STATES – WEST COAST
CALIFORNIA
SAN FRANCISCO BAY
CANDLESTICK POINT TO ANGEL ISLAND

Mercator Projection
Scale 1:30,000 at Lat 37°47'
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER

TIDAL INFORMATION

Place Name	Position (Lat/Long)	Height referred to datum of soundings (ML LW): Mean Higher High Water	Mean High Water	Diurnal Tide Level	Mean Lower Low Water
		feet	feet	feet	feet
Alcatraz I.	(37°50'N/122°25'W)	5.8	5.2	2.9	0.0
Rincon Pt.	(37°47'N/122°23'W)	6.3	5.7	3.1	0.0
Oakland Pier	(37°48'N/122°20'W)	6.0	5.4	3.0	0.0
Alameda	(37°48'N/122°18'W)	6.5	5.9	3.2	0.0
San Leandro Channel	(37°42'N/122°12'W)	7.2	6.6	3.6	0.0
San Francisco (Golden Gate)	(37°48'N/122°28'W)	5.8	5.2	2.9	0.0

(287) ABBREVIATIONS (For complete list of Symbols and Abbreviations, see Chart No. 1.)

Aids to Navigation (lights are white unless otherwise indicated):

AERO (aeronautical) G (green); Mo (morse code); R TR (radio tower); A (alternating); Gp (group); R (red); Rtcn (rotating); bk (back); (2) (interrupted quick); S (sounding); s (seconds); bn (beacon); Iso (isophase (5 sec)); Sc (scouring); SEC (sector); C (can); LT HO (lighthouse); O (orange); St M (statute miles); DIA (diaphone); M (nautical mile); Q (quick); VQ (very quick); E (m (equal interval) (sec)); m (minutes); R (red); W (white); F (fixed); Man-O'W (manowar tower); Ra Ref (radar reflector); Whis (whistle); Fl (flashing); Mw (mower); R Bn (radiobeacon); Y (yellow)

Bottom characteristics:

Bldr (boulders); Co (coral); gy (gray); Oys (oysters); so (soft); bk (broken); G (gravel); h (hard); Rk (rock); Sh (shells); Cy (clay); Grs (grass); M (mud); S (sand); sy (stony)

Miscellaneous:

AUTH (authorized); Obstn (obstruction); PD (position doubtful); Subm (submerged); ED (existence doubtful); PA (position approximate); Rep (reported); Wreck, rock, obstruction, or shoal swept clear to the depth indicated; Rocks that cover and uncover, with heights in feet above datum of soundings.

HEIGHTS
Heights in feet above Mean High Water.

AUTHORITIES
Hydrography and topography by the National Ocean Service, Charting and Geodetic Services with additional data from the Corps of Engineers, Department of the Navy, and U.S. Coast Guard.

HORIZONTAL DATUM
The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83) and for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.282" southward and 3.691" westward to agree with this chart.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 7 for important supplemental information.

PLANE COORDINATE GRID
(based on NAD 1927)
The California State Plane Coordinate Grid (Zone II) is indicated by dashed ticks at 10,000 foot intervals. The last three digits are omitted.

AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other privately maintained buoys are not all listed in the U.S. Coast Guard Light List.

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION
Only marine radiobeacons have been calibrated for surface use. Limitations on the use of certain other radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and Defense Mapping Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
⊙(Accurate location) ⊙(Approximate location)

NOAA VHF-FM WEATHER BROADCASTS
The National Weather Service stations listed below provide continuous marine weather broadcasts. The range of reception is variable, but for most stations is usually 20 to 40 miles from the antenna site.
Redwood City, Calif. KHB-49 162.55 MHz

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District in Long Beach, CA, or at the Office of the District Engineer, Corps of Engineers in San Francisco, CA.
Refer to charted regulation section numbers.

CAUTION
CHANGES in BUOYAGE
Mariners are advised that authorized aids to navigation are being changed to conform to maritime standards of the International Association of Lighthouse Authorities Maritime Buoyage System, Region B. Significant changes are: black port hand buoys to green, black and white vertically striped buoys to red and white vertically striped buoys; and lateral lights from white to red or green as appropriate. Changes to aids to navigation will be announced in the Defense Mapping Agency Hydrographic/Topographic Center weekly Notice to Mariners and the U.S. Coast Guard Local Notice to Mariners.

CAUTION
This chart has been corrected from the Notice to Mariners published weekly by the Defense Mapping Agency Hydrographic/Topographic Center and the Local Notice to Mariners issued periodically by each U.S. Coast Guard district by the date shown in the lower left hand corner.

WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

LOGARITHMIC SPEED SCALE
1 2 3 4 5 6 7 8 9 10 15 20 25 30 40 50 60
To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots

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18650

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

(CONTINUED ON CHART 18650)

C 55.418/7: 18650

Nautical Chart Catalog No. — Panel N

Formerly C&GS 5838, 1st Ed., Feb. 1926

(CONTINUED ON CHART 18649)

Nautical Miles

Yards

SOUTHBOUND SAN FRANCISCO BAY TRAFFIC LANE

SEPARATION LINE (See note C)

NORTHBOUND SAN FRANCISCO BAY TRAFFIC LANE

BERKELEY

EMERYVILLE

GENERAL ANCHORAGE NO. 6
110.224 (See note A)

BERKELEY PIER (Ruins)

Emeryville Marina

RADIO TOWER (EPDC - 650 kHz KRE - 1460 kHz)

TANK

STACK

TREASURE ISLAND

PRECAUTIONARY AREA (See note C)

TEMPORARY ANCHORAGE NO. 7
110.224 (See note A)

RESTRICTED AREA 334.1060 (See note A)

Oil Pipeline Area

Navy moorings

SAN FRANCISCO-OAKLAND BAY BRIDGE

Toll Bridge

RADIO TOWER

CUPOLA

Blossom Rock

YERBA BUENA I.

RADAR TOWER (TALLER OF TWO)

NORTHBOUND SAN FRANCISCO BAY TRAFFIC LANE

SOUTHBOUND SAN FRANCISCO BAY TRAFFIC LANE

SEPARATION LINE (See note C)

OUTER HARBOR ENTRANCE CHANNEL

OAKLAND OUTER HARBOR

Seventh Street Marine Terminal

RESTRICTED AREA 334.1040 (See note A)

35 FEET AUG-SEPT 1983

MIDDLE HARBOR

BAR CHANNEL (see note)

Radio Tower Tower

INNER HARBOR ENTRANCE CHANNEL

OAKLAND INNER HARBOR

INNER HARBOR REACH

MARKERS

RESTRICTED AREA 334.1030 (See note A)

LIMITED TRAFFIC AREA (See note C)

GENERAL ANCHORAGE NO. 8
110.224 (See note A)

RESTRICTED AREA 334.1020 (See note A)

CONTROL TOWER

AERO Rotating W & G

RADIO TOWERS

TANKS

CONSULT NAVAL PORT SERVICES OFFICE ALAMEDA FOR CONTROLLING DEPTHS

RESTRICTED AREA 334.1030 (See note A)

FIXED BRIDGE HOR CL 98 FT VERT CL 9 FT

Ballena Bay

MOSP PLASTAFF

TOWER

Oakland Inner Harbor Reach

GENERAL ANCHORAGE NO. 9
110.224 (See note A)

San Leandro Channel

BAY FARM ISLAND

FORBIDDEN ANCHORAGE
110.224 (See note A)

ANCHORAGE FOR EXPLOSIVES NO. 14
110.224 (See note A)

GENERAL ANCHORAGE NO. 9
110.224 (See note A)

Bonine Area

MAGNETIC

1° ANNUAL CHANGE

YEAR 1970 (1985)

CISCO

SAN FRANCISCO WATERFRONT LIGHTS

Fog signals along waterfront from North Point to Lewis Point are privately maintained.

North Pt

Telegraph Hill

COIT TOWER

PYRAMIDAL BUILDING

FERRY TOWER

Rincon Pt

Pier 12

Pier 13

Pier 14

Pier 15

Pier 19

Pier 20

Pier 22 1/2

Pier 23

Pier 24

Pier 26

Pier 28

Pier 30

Pier 32

Pier 34

Pier 36

Pier 38

China Basin

BASCULE BRIDGE HOR CL 103 FT VERT CL 135 FT

Mission Rock Terminal

Central Basin

Potrero Pt

GAS TANK

STACK

Army Street Terminal

Islais Creek Channel

BASCULE BRIDGE HOR CL 97 FT VERT CL 41 FT

Islais Creek

Islais Creek Range

TR (ISSFD) 160 kHz

India Basin

RESTRICTED AREA 334.1010 (See note A)

HUNTERS POINT

Hunters Pt Ldg Lts

Pt Avisadero

BAYVIEW

Double Rock

South Basin

RADIO TOWER (KOIT) 1260 kHz

Stadium

BAYSHORE

Candlestick Pt.

NOTE B
Anchoring or dragging anchor within the charted limits of the Bay Area Rapid Transit (BART) tunnel crossing is prohibited (33 CFR 110.224, g, 2).

OAKLAND

CITY HALL

SPIRE TRIBUNE BLDG.

COUNTY COURT HOUSE

BROOKLYN BASIN

Fruitvale Bridge

ALAMEDA

CONTINUATION TO SAN LEANDRO BAY

OAKLAND

ALAMEDA

SAN LEANDRO BAY

GENERAL ANCHORAGE NO. 9
110.224 (See note A)

Oakland Estuary

BASCULE BRIDGE HOR CL 82 FT VERT CL 20 FT

Fruitvale Area

Oil Pipeline Area

AIRPORT CHANNEL

RADIO TOWER

BAY FARM ISLAND

Metropolitan Oakland International Airport

OAKLAND INNER AND OUTER HARBORS

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS (SURVEYS TO SEPT 1984)

WHAR OR CHANNEL	CONTROLLING DEPTHS FROM SOUNDING IN FEET AT MEAN LOWER LOW WATER (MLLW)				DATE OF SURVEY	PROJECT DIMENSIONS	
	LEFT OUTSIDE QUARTER	LEFT MIDDLE QUARTER	RIGHT MIDDLE QUARTER	RIGHT OUTSIDE QUARTER		WIDTH (FEET)	DEPTH (FEET)
BAR CHANNEL	34.1	38.2	41.0	37.5	3-84	800	42.0
OUTER HARBOR ENTRANCE CHANNEL	43.1	37.2	36.0	31.7	3-84	800-600	0-87
OUTER HARBOR	22.4	19.5	33.3	816.0	3-84	800-1700	1.40
JONES HARBOR							
ENTRANCE CHANNEL	34.7	30.0	33.3	34.7	1-3-84	800-600	0.69
INNER HARBOR REACH	29.0	34.1	42.1	0.0	1-84	600-400	0.87
GROVE ST PIER TO BROOKLYN BASIN	35.8	34.5	33.7	0.11.4	1-84	400	1.30
BROOKLYN BASIN	0.21.4	36.1	29.3	0.10.5	1-84	600-700	0.98
BROOKLYN BASIN SOUTH CHANNEL	0.7.5	0.9.4	0.10.1	0.11.1	1-84	400-500	0.98
PARK ST BRIDGE REACH	10.5	20.8	0.10.1	0.10.1	1-84	0.98	

A. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 37.0 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
B. THE HARBOR HAS SHOALED ALONG THE EDGE, A DEPTH OF 35.1 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
C. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 31.8 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
D. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 39.0 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
E. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 40.0 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
F. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 31.4 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.
G. THE CHANNEL HAS SHOALED ALONG THE EDGE, A DEPTH OF 31.8 FEET WAS AVAILABLE IN THE MIDDLE HALF OF THE QUARTER.

NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION.

SURVEYED BY COMPLETE ASSISTED METHOD

NOTE C
SAN FRANCISCO VESSEL TRAFFIC SERVICE

Traffic lanes are intended for use by vessels 300 gross tons and over; arrows indicate the approximate direction of traffic flow within each lane.

PRECAUTIONARY AREA

Vessels transiting the precautionary area east of Alcatraz Island should exercise special caution.

RECREATION AREAS

Recreation areas are intended primarily for use by recreation vessels. Such areas should not be utilized by vessels 300 gross tons or more for through passage or for any other purpose, except in case of emergency or special circumstances.

LIMITED TRAFFIC AREA

Passage by vessels 300 gross tons or more through the Limited Traffic Area south of Yerba Buena Island should be limited to one such vessel at a time to avoid crossing or meeting situations.

VESSEL TRAFFIC SERVICE

The San Francisco Vessel Traffic Service utilizes channel 13 and may be contacted on channels 11 or 16, call sign "San Francisco Vessel Traffic Service." See U. S. Coast Pilot for additional information; specific operating procedures are available from Commander, Twelfth Coast Guard District.

NOAA nautical charts are constructed to exacting standards and are designed to promote safe navigation. Since our waterways are subject to continual change, the National Ocean Service encourages chart users to submit corrections or comments for the improvement of this product to the Director, Charting and Geodetic Services (N/CG22), National Ocean Service, NOAA, Rockville, Maryland 20852. By working together, we can make our activities safer and more enjoyable.

Thomas J. Moorhouse
Assistant Administrator for Ocean Services
and Coastal Zone Management

LOGARITHMIC SPEED SCALE

2 3 4 5 6 7 8 9 10 15 20 25 30 40 50 60

...ce one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place ...d left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

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SOUNDINGS IN FEET

FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	100
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	126	132	138	144	150	156	162	168	174	180	186	600
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

(San Francisco Bay)
SOUNDINGS IN FEET - SCALE 1:20,000

18650

(CONTINUED ON CHART 18651)